

CITY OF SANTA CLARITA

AIR QUALITY ELEMENT AMENDMENT

Submitted by:

City of Santa Clarita
23920 Valencia Boulevard, Suite 300
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INTRODUCTION

Air Quality Elements are optional elements under state law. However, the adopted 1989 regional South Coast Air Quality Management Plan (AQMP) identifies many measures for controlling air pollution, including some that are directed at local governments for implementation. The AQMP requires that each jurisdiction in the South Coast Air Basin incorporate the AQMP goals, policies, and implementation measures intended for local implementation in its General Plan.

This element describes the local and regional setting, conditions and environment, which affect the air quality in the Valley. It should be noted that even if all of the goals and policies of this element are implemented to their fullest, the ultimate improvement of air quality is dependent upon region-wide implementation.

BACKGROUND

This section focuses on air quality within Santa Clarita and the surrounding region. Santa Clarita is located in the South Coast Air Basin of California, a 6,600-square-mile area encompassing Orange County and the nondesert portions of Los Angeles, Riverside, and San Bernardino counties. Bounded by the Pacific Ocean to the west, the San Gabriel, San Bernardino, and San Jacinto mountains to the north and east, and San Diego County to the south, with abundant sunshine and frequent inversion levels, the Basin is an area, which is naturally conducive to the formation of air pollution.

REGIONAL CLIMATE

The strength and location of a semipermanent, subtropical high pressure cell over the Pacific Ocean primarily controls the Basin's climate. Climate is also affected by the moderating effects of differential heating between the land area of California and the adjacent Pacific Ocean.

Terrain features allow various microclimates to exist within the Basin. Mountains and hills are primarily responsible for the wide variations of rainfall, temperatures, and localized winds that occur throughout the South Coast Air Basin. Temperature variations have an important influence on wind flow, pollutant dispersion along mountain ridges, vertical mixing, and photochemistry. Since the moderating marine influence decreases with distance from the coast, monthly and annual spreads between temperatures are greatest inland. Precipitation is highly variable seasonally. Summers are often completely dry, and there are frequent periods of 4 to 5 months with no rain. In the winter, occasional storms from the high latitudes sweep across the coast, bringing rain inland. Annual rainfall is lowest in the coastal plain and inland valleys, higher in the foothills, and highest in the mountains.



SANTA CLARITA MICROCLIMATE

The City of Santa Clarita lies in Los Angeles County north of the San Fernando Valley, surrounded by the Santa Susana and San Gabriel mountain ranges on the south, east, and west, and the Sierra Pelona Mountains on the north. Santa Clarita lies in the transitional microclimatic zone of the Basin, located between two climate types, termed "valley marginal" and "high desert." Situated far enough from the ocean to usually escape coastal damp air and fog, the summers are hot and the winters sunny and warm. Summer nights are pleasantly cool and the surrounding slopes are sufficient to drain off cold air near the ground on clear winter nights.

Santa Clarita's climate is relatively mild. Annual average daytime temperatures range from 89.7 degrees Fahrenheit (F) in summer to 63.6 degrees F in winter. Low temperatures average 58.9 degrees F in summer and 41.3 degrees F in winter. In wintertime during calm, clear nights, the localized mountain/valley drainage flow is enhanced and cool air drains downslope towards the valley floor. Annual precipitation for Santa Clarita is 13.10 inches, which occurs almost exclusively from late October to early April. As elsewhere in the Basin, precipitation is higher in the mountains than in the valley. Portions of the Santa Susana and San Gabriel Mountains receive between 22 and 24 inches of rainfall per year.

WIND FLOW PATTERNS

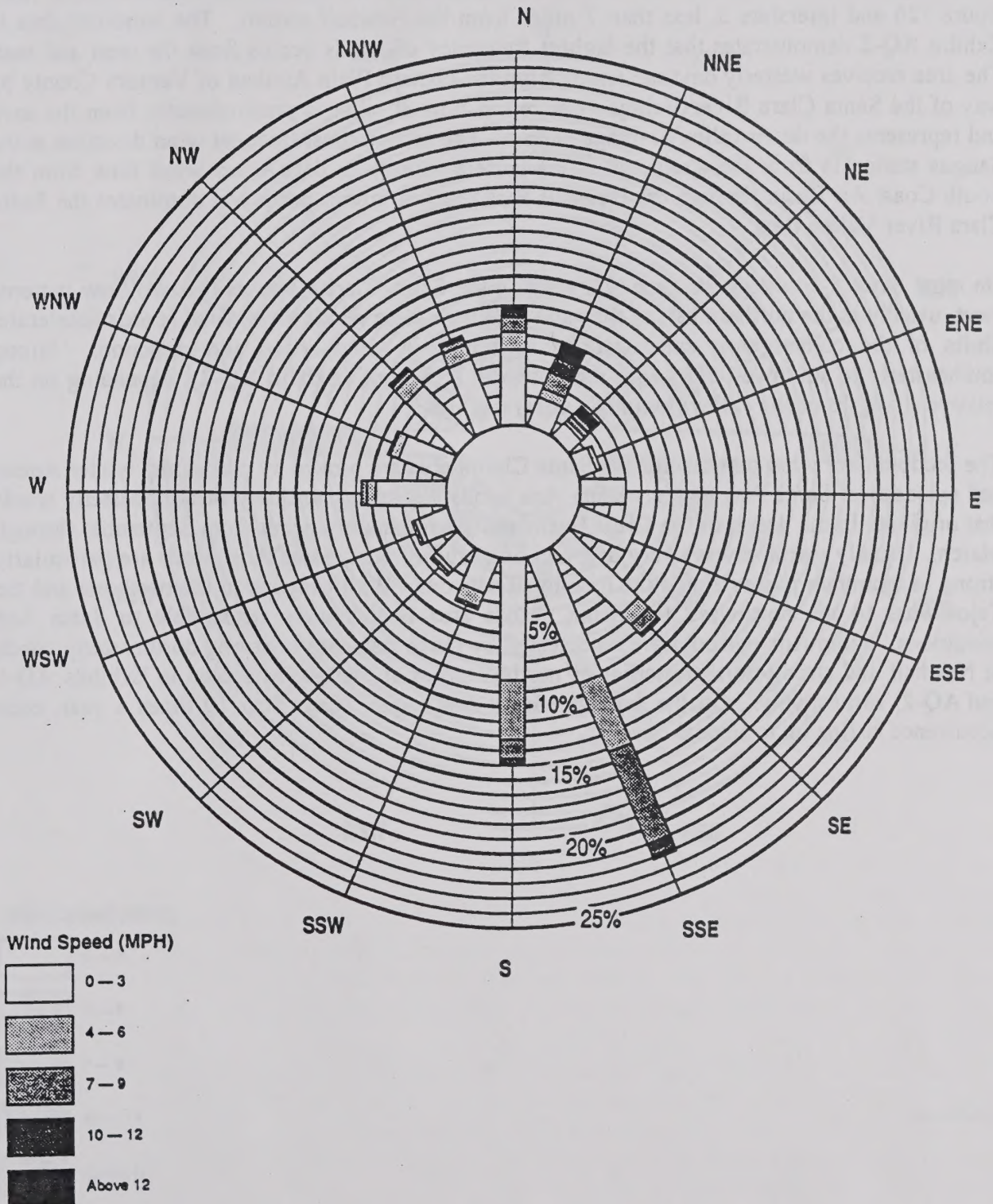
Winds across the project area are an important meteorological parameter since they control the initial rate of dilution of locally generated air pollutant emissions, as well as their regional trajectory. Predominant wind patterns for the Santa Clarita area generally follow those described for a mountain/valley regime. During the day, effects of the onshore flow reach inland and are enhanced by a localized upvalley or mountain pass wind. During the night, surface radiation cools the air in the mountains and hills, which flows downvalley, producing a gentle "drainage wind." The topography surrounding Santa Clarita leads to two separate valley flow patterns--distinctly different predominant wind directions in the southern and northern portions of the City and a convergence of these winds within the City.

The windrose data shown in Exhibit AQ-1 represents the frequency of wind speeds and direction measured at the South Coast Air Quality Management District air monitoring station in Newhall located in the southern portion of the City of Santa Clarita. The predominant daytime wind flows from the south/southeast as the effects of the regional onshore flow are modified by the upvalley flow from the San Fernando Valley through the Newhall Pass. This pattern is most dominant during summer, the peak smog season. At night, the local drainage flows down the Santa Clara River Valley, as shown in Exhibit AQ-1, which indicates the frequency of wind from the east.



Exhibit AQ-1

Wind Rose at Newhall (1970 - 1975) - Santa Clarita General Plan





Farther north, a completely different pattern is observed. Exhibit AQ-2 represents the frequency of wind speed and direction measured in the Santa Clarita community of Saugus. The wind measuring station was located adjacent to the Santa Clara River, near the intersection of State Route 126 and Interstate 5, less than 7 miles from the Newhall station. The windrose data in Exhibit AQ-2 demonstrates that the highest frequency of winds occurs from the west and east. The area receives westerly daytime winds from the Oxnard Plain Airshed of Ventura County by way of the Santa Clara River Valley. The return flow at night is predominantly from the east, and represents the down valley drainage pattern. The second most frequent wind direction at the Saugus station is from the southeast. This pattern represents days when wind flow from the South Coast Air Basin through the Newhall Pass reaches farther north and dominates the Santa Clara River Valley flow.

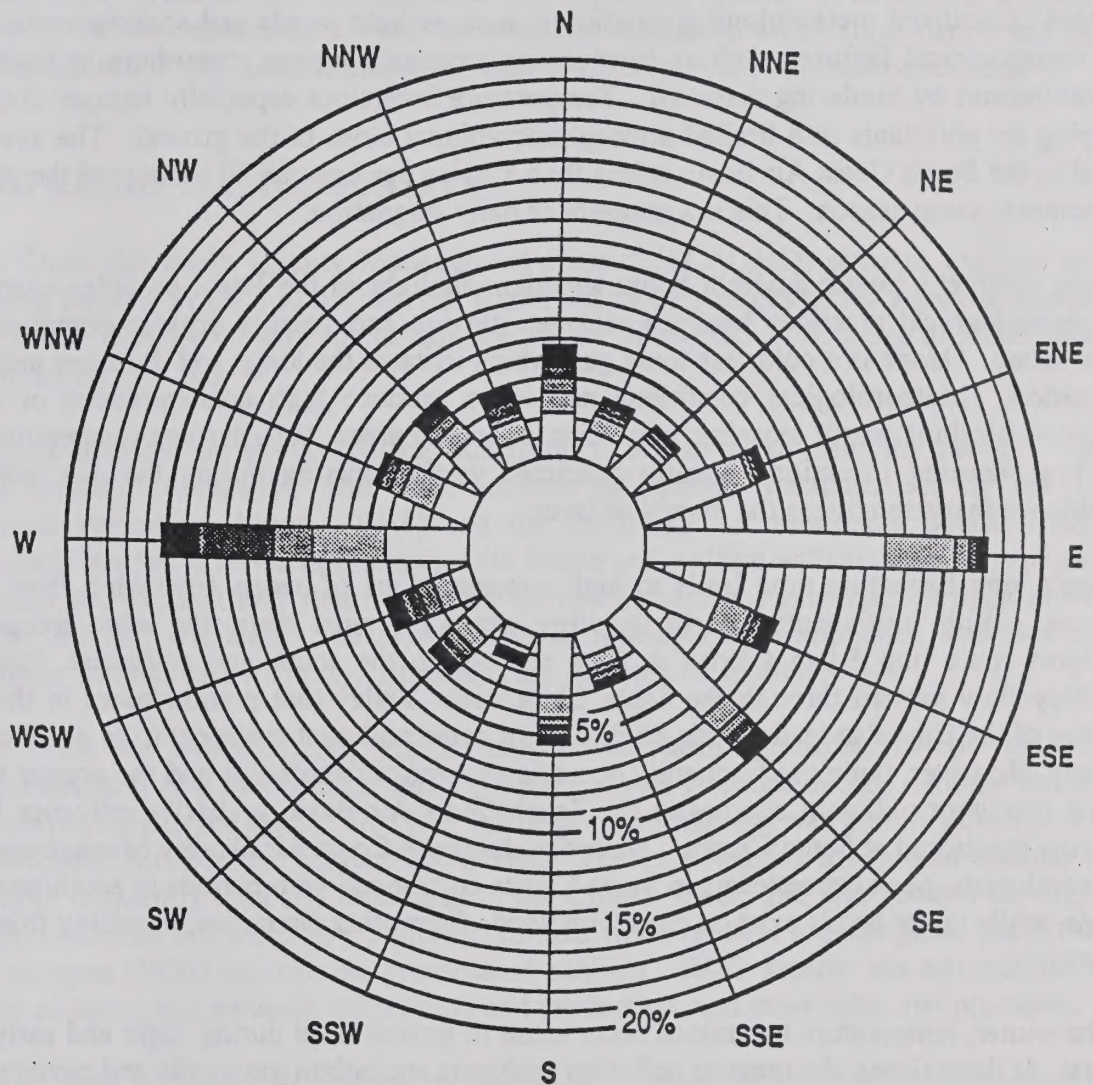
On most days, a convergence zone will exist in the Santa Clarita area as the two flow patterns meet, usually in the northern half of the valley. Where these winds meet, wind speeds accelerate. Shifts of the convergence zone lead to variations in wind speed and direction. Strong southeasterly to southwesterly winds are observed at Saugus (Exhibit AQ-2), depending on the relative strengths of the valley (mountain pass) regimes.

The predominant wind patterns for the Santa Clarita area are broken by occasional winter storms and episodes of Santa Ana winds. Santa Ana winds are strong northerly or northeasterly winds that originate in the desert of the Great Basin and predominantly occur from September through March. Usually warm, always very dry, and often full of dust, Santa Ana winds are particularly strong in mountain passes and at the mouths of canyons. With canyons to the northeast and the Tejon Pass to the northwest, the Santa Clarita area is extremely susceptible to Santa Ana conditions. Santa Ana episodes are represented by those instances of strong northeasterly winds at Newhall and strong northwesterlies to northeasterlies at Saugus, as shown in Exhibits AQ-1 and AQ-2, respectively. On the average, Santa Ana winds occur 5 to 10 times a year, each occurrence lasting up to several days.

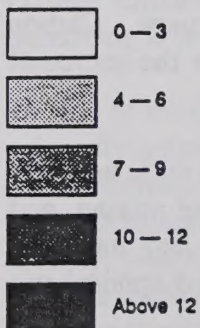


Exhibit AQ-2

Wind Rose at Saugus (1958 – 1971) - Santa Clarita General Plan



Wind Speed (MPH)



Source: SCAQMD



METEOROLOGICAL INFLUENCES ON AIR QUALITY

Regional flow patterns have an effect on air quality patterns by directing pollutants downwind of sources. Localized meteorological conditions such as light winds and shallow vertical mixing, and topographical features such as surrounding mountain ranges, contribute to high pollutant concentrations by hindering dispersal. Temperature inversions especially hamper dispersion by trapping air pollutants in a limited atmospheric volume close to the ground. The average wind speed in the South Coast Air Basin is less than 5 miles per hour on 80 percent of the days during the summer smog season. This is a measure of daily stagnation.

During summer's longer daylight hours abundant sunlight in the Basin provides energy to fuel the photochemical reactions between nitrogen dioxide and volatile organic compounds which form ozone. Ozone is a colorless toxic gas, which irritates the lungs and damages materials and vegetation. Meteorological conditions needed to produce high concentrations of ozone are adequate sunshine, early morning stagnation in source areas, high surface temperatures, strong and low morning inversions, greatly restricted vertical mixing during the day, and daytime subsidence that strengthens the inversion layer.

Ozone's long formation time leads to high concentrations of ozone downwind from precursor sources. With south/southeasterly upvalley winds on most days, the most frequent ozone transport route into Santa Clarita is from sources to the south and southeast. The westerly upvalley flow pattern through the Santa Clara River Valley that predominates in the northern portion of the City also leads to the likelihood of some pollutant transport from areas of Ventura County. However, the more frequently occurring south/southeasterlies and the greater number of ozone precursor pollutant sources in the South Coast Air Basin primarily influence the ozone patterns monitored at Santa Clarita. According to South Coast Air Quality Management District meteorologists, peak ozone levels in Santa Clarita correspond with periods of south/southeasterly winds; while lower levels exist on days with winds from other directions, including from Ventura County.

In the winter, temperature inversions occur close to ground level during night and early morning hours. At these times, the greatest pollution problems are carbon monoxide and nitrogen oxides.

High carbon monoxide concentrations occur on winter days with strong surface inversions and light winds. A surface inversion exists on 70 percent of the mornings in January. Carbon monoxide transport is extremely limited, and peak concentrations occur very near the source of emissions. Highest concentrations are associated with areas of high traffic density.

High nitrogen dioxide levels usually occur during the autumn or winter on days with summer-like weather conditions. These conditions include low inversions, limited daytime mixing, and stagnant windflow. Although days are clear, sunlight is limited in duration and intensity; therefore, the photochemical reactions, which would form ozone are incomplete and atmospheric ozone concentrations are low.



Atmospheric particulates are made up of fine solids or liquids such as soot, dust, aerosols, fumes, and mists. A large portion of the total suspended particulate matter (TSP) in the atmosphere is finer than 10 microns (PM_{10}). These small particulates cause the greatest health risk since they can more easily penetrate the defenses of the human respiratory system. A substantial fraction of PM_{10} forms in the atmosphere as a result of chemical reactions, which form ozone and other secondary pollutants. Peak concentrations of PM_{10} occur downwind of emission sources.

EXISTING REGIONAL AIR QUALITY

The South Coast Air Basin Quality Management District (SCAQMD) samples ambient air at 32 monitoring stations in the South Coast Air Basin and those portions of the adjacent Southeast Desert Air Basin which are under the jurisdiction of the SCAQMD. Locations of these stations are depicted on Exhibit AQ-3.

Air quality is determined by comparing contaminant levels in air samples taken at these monitoring stations to national and state ambient air quality standards set by the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB). These standards are set at levels to protect public health and welfare with an adequate margin of safety. There are national and state standards for ozone, carbon monoxide, nitrogen dioxide, PM_{10} , sulfur dioxide, and lead. The SCAQMD also measures for compliance with two other state standards: sulfates and visibility. Standards are depicted on Exhibit AQ-4.

The South Coast Air Basin has not attained national standards for ozone, carbon monoxide, nitrogen dioxide, and fine particulates matter (PM_{10}). Levels of ozone exceed national and state standards everywhere in the Basin. In 1988, the peak ozone reading was almost three times the National Ambient Air Quality Standard (NAAQS). The Los Angeles urban area exceeds this standard more frequently than any other area in the United States, and also records the highest peak readings. Ozone is a secondary pollutant, formed when reactive organic gases (ROG) with oxides of nitrogen (NO_x) react in the presence of sunlight. ROG sources are automobiles and evaporation of paints and solvents, oil refining and production, and other industrial processes.

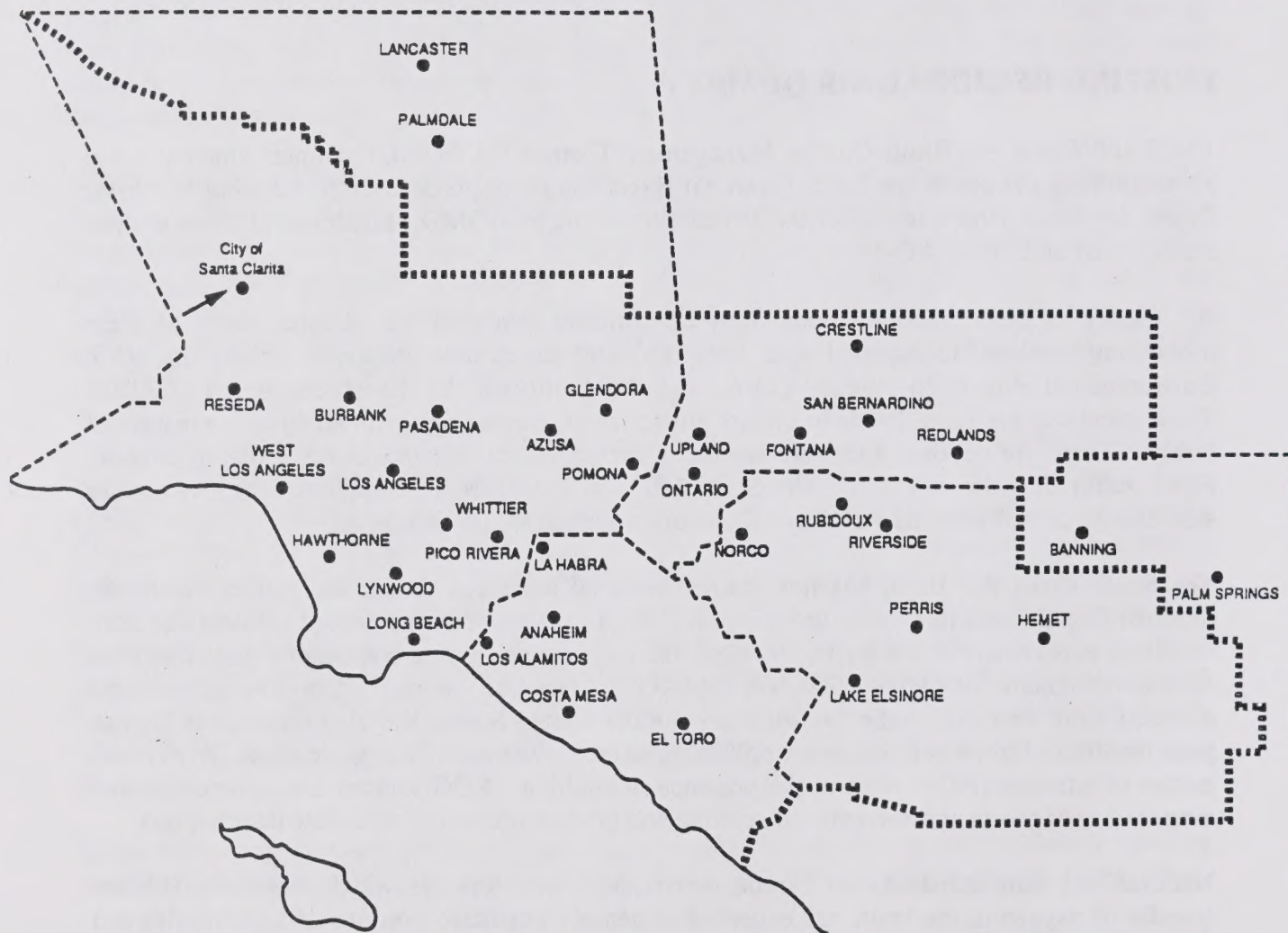
National and state standards for carbon monoxide, a colorless gas which interferes with the transfer of oxygen to the brain, are exceeded in densely populated portions of Los Angeles and Orange counties. Peak readings are approximately double the national standard. Carbon monoxide is produced almost entirely from automobiles.

Oxides of nitrogen are produced through combustion at high temperatures. Sources of NO_x are primarily automobiles, but also include power plants and oil refineries. Besides contributing to ozone formation, nitrogen dioxide, a reddish-brown gas, can cause breathing difficulties. The national annual average nitrogen dioxide standard is exceeded by about 5 percent in Los Angeles County, which is the only area in the nation, which still exceeds this standard. The state nitrogen dioxide standard is exceeded in both Los Angeles and Orange counties. The number of readings over the standards fluctuates from year to year, depending on weather patterns.

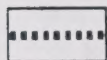


Exhibit AQ-3

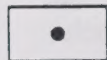
SCAQMD Air Monitoring Network - Santa Clarita General Plan



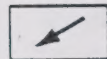
Legend



South Coast Air Basin



Air Monitoring Station



Station Representative of Study Area's Air Quality



Exhibit AQ-4

Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Primary Standards	California Standard
Ozone	8-Hour	0.8 PPM	--
	1-Hour	0.12 PPM	0.09 PPM
Carbon Monoxide	8-Hour	9.0 PPM	9.0 PPM
	1-Hour	35.0 PPM	20.0 PPM
Nitrogen Dioxide	Annual	0.05 PPM	--
	1-Hour	—	0.25 PPM
Sulfur Dioxide	Annual	0.03 PPM	--
	24-Hour 1-Hour	0.14 PPM --	0.04 PPM 0.25 PPM
Suspended Particulates	PM10 Annual	50 ug/m3	30 ug/m3
	PM10 24-Hour	150 ug/m3	50 ug/m3
Lead	30-Day Average	--	1.5 ug/m3
	3-Month Average	1.5 ug/m3	--
Sulfates	24-Hour Average	—	25 ug/m3
Lead	30-Day Average (Federal), Calendar Quarter (Calif)	1.5 ug/m3	1.5 ug/m3
Visibility-Reducing Particles	8-Hour Average (10AM to 6PM)	In sufficient amount such that the extinction coefficient is greater than .23 inverse kilometers (to reduce the visual range to less than 10 miles) at relative humidity less than 70 percent	--

Ppm = parts per million

Ug/m3 = micrograms per cubic meter

Source: California Air Resources Board, US EPA



PM₁₀ levels regularly exceed the state standard throughout the Basin and exceed the national standard in eastern portions of the Basin. PM₁₀ irritates the respiratory system directly and in combination with gases, which adhere to its surface. PM₁₀ is primarily produced by soil disturbance, as in grading and excavation, through tire and brake wear, and through secondary pollutant reactions which form aerosols in the atmosphere.

Sulfur dioxide and lead levels in all areas of the Basin are below national and state ambient air quality standards.

EXISTING SANTA CLARITA AIR QUALITY

Ambient air quality in the City of Santa Clarita is characterized by readings taken at the SCAQMD pollutant monitoring station located in the community of Newhall. Before 1989, ozone was the only pollutant monitored at this station since it was the only pollutant considered potentially to exceed air quality standards. The Santa Clarita air quality monitoring station (formerly known as the Newhall station) is located in the fire station at 24811 San Fernando Road. Table AQ-1 shows the ambient air quality summary for the Santa Clarita Air Quality Monitoring Station and lists the number of days that the state and federal ozone air quality standards have been exceeded at the Santa Clarita station for each year between 1993 and 1997, the latest data available.

Pollutants from emission sources outside of the Santa Clarita Valley have traditionally been the major source of the area's high ozone concentrations. With the growth in population in the area over the past decade, and the subsequent increase in automobile traffic, the potential to generate pollutants locally has increased. Monitoring for carbon monoxide, nitrogen dioxide, and sulfur dioxide, in addition to ozone, was initiated at the Santa Clarita station by the SCAQMD midway through 1989 as a means of measuring future improvement or deterioration in local air quality. PM₁₀ is not monitored in Santa Clarita.

TABLE AQ-1
AMBIENT AIR QUALITY SUMMARY
SANTA CLARITA AIR QUALITY MONITORING STATION

Ozone	1993	1994	1995	1996	1997
State Standard (1-hr avg = 0.9 ppm)					
Federal Standard (1-hr avg = 0.12 ppm)					
Maximum Concentration (ppm)	0.28	0.30	0.256	0.239	0.205
Number of days State 1-hr standard exceeded	185	165	153	141	144
Number of days Federal 1-hr standard exceeded	124	118	98	85	64

ppm = parts per million

Source: California Air Resources Board, 1993-1997



During 1989, the SCAQMD conducted special sampling studies at two locations in Santa Clarita to determine the most representative location for siting an air monitoring station. The study found that ozone readings at the Newhall and Canyon Country sites were consistent, but that carbon monoxide and nitrogen dioxide readings were consistently higher at the Newhall site. Particulate matter (PM₁₀) readings were higher at the Canyon Country site than the Newhall site when levels were below 100 micrograms per cubic meter and higher at the Newhall site when concentrations were above 100 micrograms per cubic meter.

Exhibit AQ-5 shows readings taken from 1989 to 1998 as a maximum annual one-hour average and Exhibit AQ-6 shows the number of days exceeding the State one-hour standard for the same time period. Traditionally, ozone and PM₁₀ are higher in summer, and carbon monoxide and nitrogen dioxide generally experience peak levels in winter. The exhibits are based on data collected by the SCAQMD.

Because of the geographical and meteorological conditions described previously, Santa Clarita records some of the highest ozone readings in the Basin, and also records more exceedances of the ambient ozone standards than many stations. Although local sources of ozone precursor pollutants, such as NO_x and reactive organic gases (ROG), will incrementally contribute to regional levels of ozone, local ozone concentrations usually result from pollutants transported from outside the Santa Clarita Valley.

A study conducted at the University of Southern California in June 1989 by doctoral candidate Kadio Ahossone found that ozone concentrations in Santa Clarita declined slightly over the ten year period between 1978 and 1988. The decrease was small, averaging about 0.0132 ppm. From 1989 to 1998, the trend toward decreasing ozone concentrations and number of days exceeding the State one-hour standard in Santa Clarita has continued to decline as depicted on the trendlines shown on Exhibits AQ-5 and AQ-6.



Exhibit AQ-5
Santa Clarita Ozone
 Maximum Annual One-Hour Average

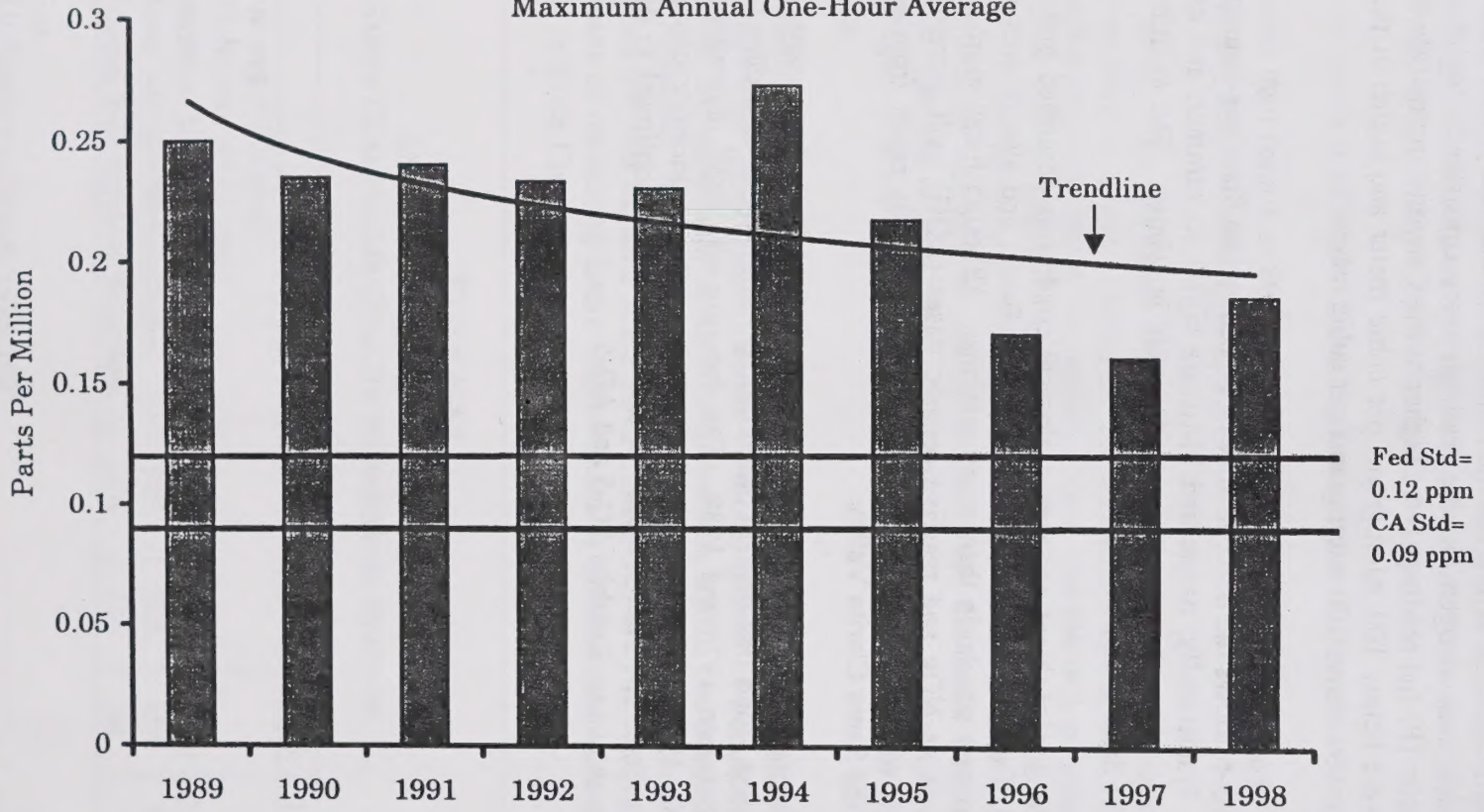
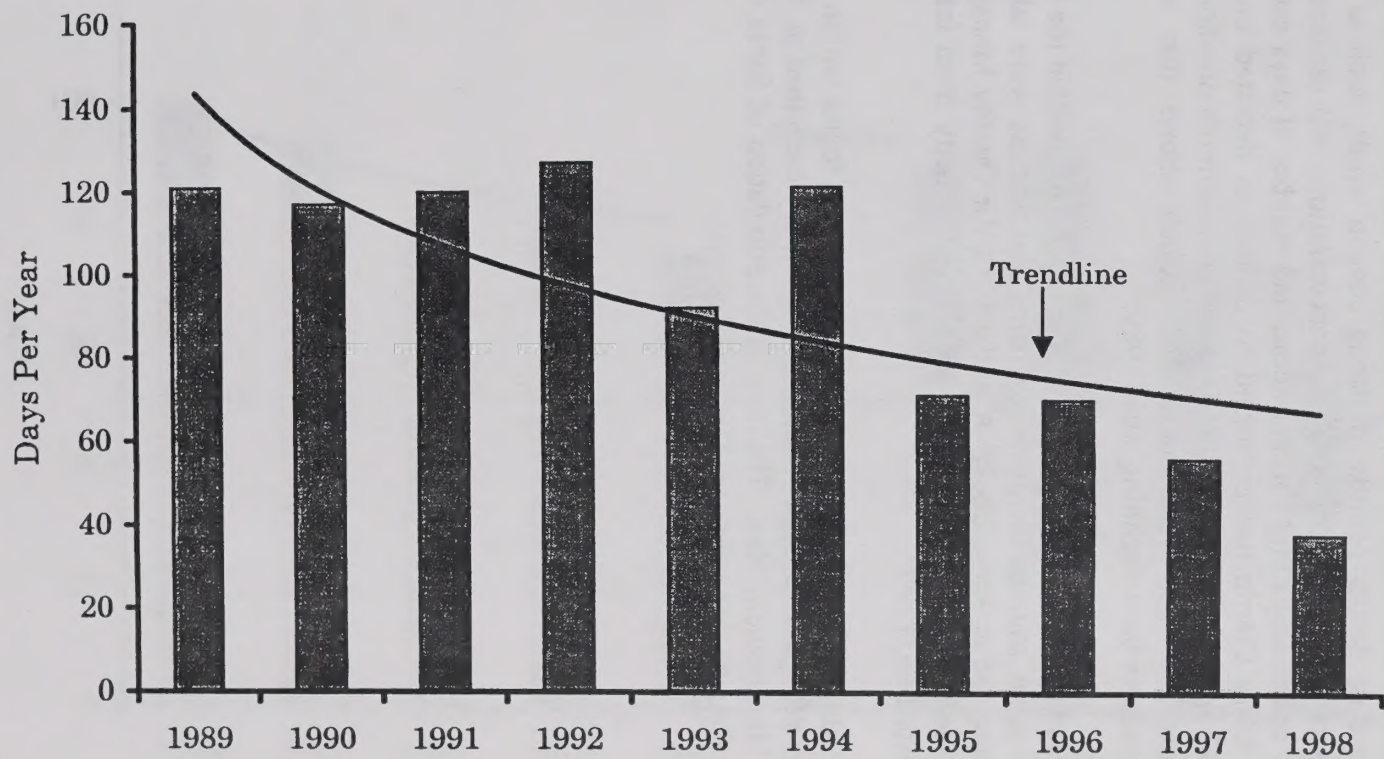




Exhibit AQ-6
Santa Clarita Ozone
 Days Exceeding the State One-Hour Standard





Locally generated air pollutants are also a cause for concern in the Santa Clarita area, where increased growth has led to increased automobile traffic. Highly localized carbon monoxide concentrations can be expected at congested intersections, especially in winter. PM_{10} concentrations in the area are a result from locally generated emissions and the particulates transported from elsewhere in the South Coast Air Basin. Occasionally high PM_{10} levels result from fugitive dust during periods of strong canyon winds, such as the Santa Ana's. With a significant increase in truck traffic, PM_{10} concentrations will escalate. From 1989 to 1998, the trend toward decreasing PM_{10} concentrations and number of days exceeding the State one-hour standard in Santa Clarita has continued to decline as depicted on the trendlines shown on Exhibits AQ-7 and AQ-8. Exhibit AQ-9 shows the maximum one-hour average concentration of carbon monoxide. The trendline on this exhibit shows that average carbon monoxide concentrations have been declining since 1989.

Table AQ-2 summarizes emissions for point sources found within the City of Santa Clarita. Data for the large point sources identified by name and address were taken from a 1985 emission inventory contained in Appendix III-A to the 1989 Air Quality Management Plan. The data for the miscellaneous small sources were summarized directly from information provided by the SCAQMD, April 30, 1990.

Table AQ-3 summarizes emissions for mobile sources found within the City of Santa Clarita. The data was extrapolated from the emission inventory contained in Appendix III-A of the 1989 Air Quality Management Plan. The ratio of the population of Santa Clarita to the population of Los Angeles County was used to scale the emissions.



Exhibit AQ-7
Santa Clarita PM10
Maximum 24-Hour Average Concentration

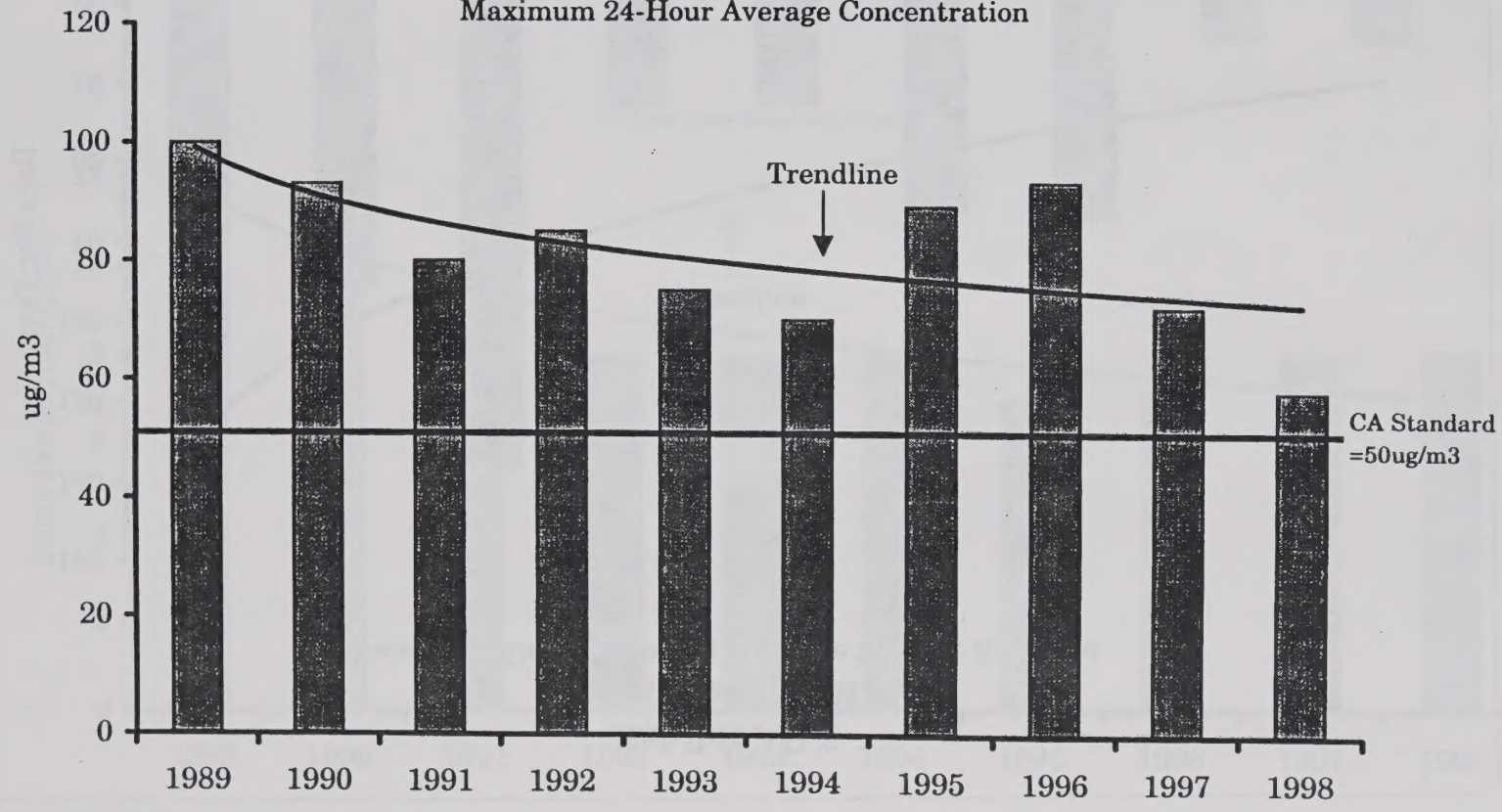




Exhibit AQ-8
Santa Clarita PM10
 Calculated Days Exceeding the State 24-Hour Standard

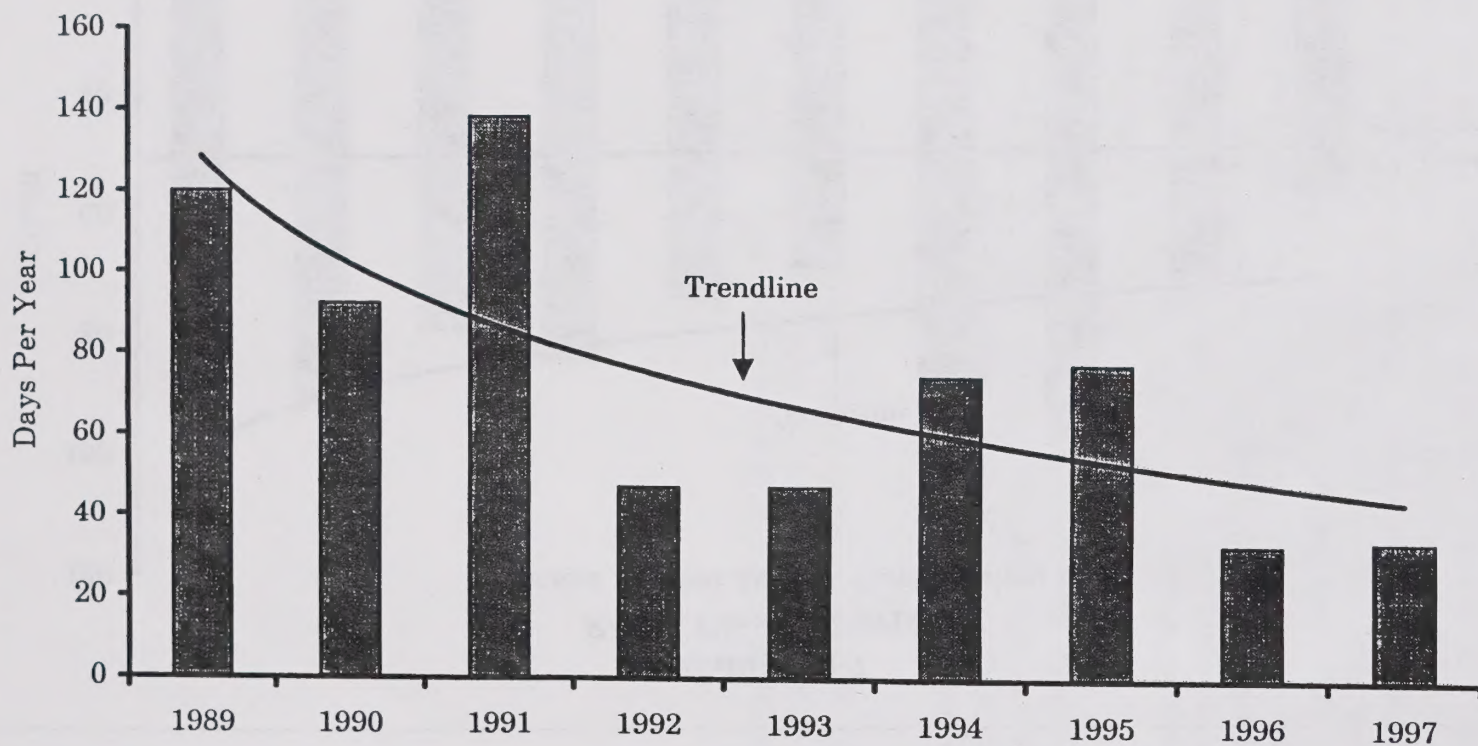


Exhibit AQ-9
Santa Clarita Carbon Monoxide
Maximum 1-Hour Average Concentration

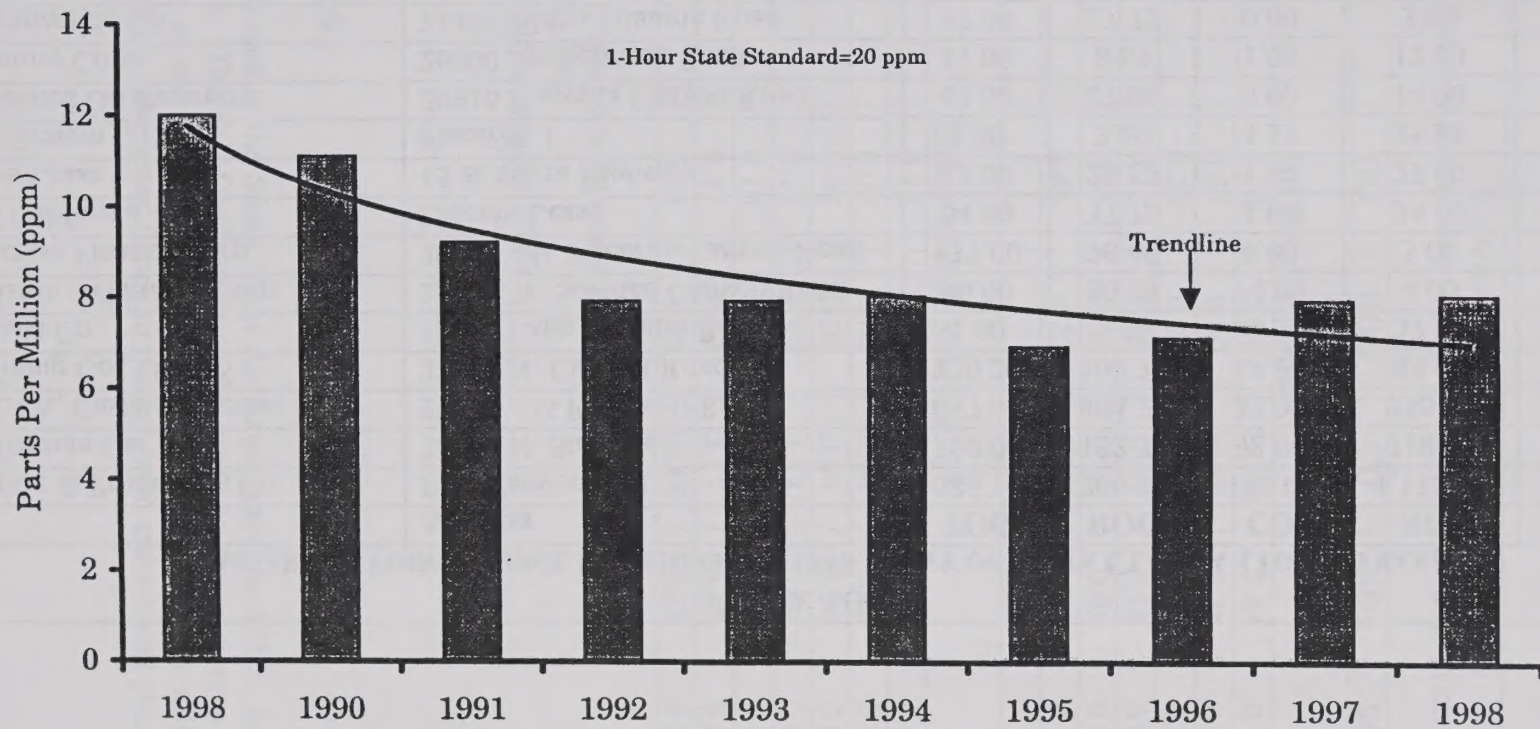




TABLE AQ-2
SUMMARY OF POINT SOURCE EMISSIONS FOR 1985 - CITY OF SANTA CLARITA (TONS / YEAR)

Facility	Address	TOG	ROG	CO	NO _x	SO _x	PM
Sun Exploration & Production Co.	Pico Canyon Rod	686.10	266.99	140.00	1,116.00	0.00	1.00
Southern California Gas Co.	28601 N. Stanford	390.00	122.73	98.00	718.00	0.00	0.00
Exxon Co., USA, Castaic Junction	27720 - ½ Feed Mill Road	637.00	404.79	32.00	256.00	0.00	0.00
Newhall Refining Co., Unit 05	22674 N. Clampit Road	120.20	100.71	14.00	84.00	23.00	10.00
R.W. Gillibrand Co.	13900 Lang Stadium Road	1.60	1.29	0.13	37.00	38.50	24.63
Bermite Division, Whittacer Corp. ¹	22116 W. Soledad Canyon Road	96.00	86.98	74.00	4.00	0.00	0.00
Tosco Production Finance Corp.	20749 - ½ Placerita Canyon Road	137.00	76.49	0.00	5.00	0.00	0.00
Union Oil of California	Lincoln Lease	64.00	37.76	4.00	34.00	0.00	0.00
Chevron USA Lease	15 & Sierra Highway	52.00	28.52	1.00	27.00	0.00	0.00
GWF Power-System Co.	Placerita 1	4.80	3.60	4.55	35.38	0.04	9.17
TOSCO Enhanced Oil Recovery	20916 Placerita Canyon Road	43.00	27.09	0.00	14.00	0.00	1.00
Keyser - Century Corp.	26000 Springbrook Road	11.00	8.69	1.00	12.00	0.00	19.00
American Cyanamide Co.	2144 Golden Triangle Road	37.00	27.72	0.00	3.00	0.00	0.00
HR Textron, Inc.	25200 W. Rye Canyon Road	134.10	2.00	0.00	2.00	0.00	0.00
Total		2,413.80	1,195.36	368.68	2,347.38	61.54	64.80
Miscellaneous Small Sources		26.75	22.11	12.95	0.55	2.91	6.43
Total		2,440.55	1,217.47	381.63	2,347.93	64.45	71.23

¹ No longer in operation

Source: SCAQMD, Air Quality Management Plan, Appendix III-4, 1989. SCAQMD 1990
 Michael Brandman Associates, 1990.



TABLE AQ-3
SUMMARY OF MOBILE SOURCE EMISSIONS – CITY OF SANTA CLARITA (TONS / YEAR)

	OG	ROG	CO	NO _x	SO _x	PM
On Road Vehicles						
Light Duty Passenger Cars	3.22	2.98	22.80	2.43	0.11	0.34
Light and Medium Trucks	0.87	0.80	6.65	0.74	0.04	0.08
Heavy Duty Gas Trucks	0.29	0.27	5.31	0.38	0.03	0.03
Heavy Duty Diesel Trucks	0.17	0.16	0.50	0.98	0.08	0.17
Motorcycles	0.06	0.06	0.17	0.01	0.00	0.00
Total	4.61	4.27	35.43	4.54	0.26	0.62
Other Mobile Sources						
Off Road Vehicles	0.12	0.12	0.55	0.05	0.01	0.00
Trains	0.03	0.02	0.04	0.08	0.01	0.00
Aircraft	0.09	0.08	0.44	0.10	0.01	0.00
Mobile Equipment	0.13	0.12	1.13	0.44	0.02	0.05
Utility Equipment	0.10	0.09	1.01	0.02	0.00	0.00
Total	0.47	0.43	3.17	0.69	0.05	0.05
Total Mobile Sources	5.08	4.70	38.60	5.23	0.31	0.67

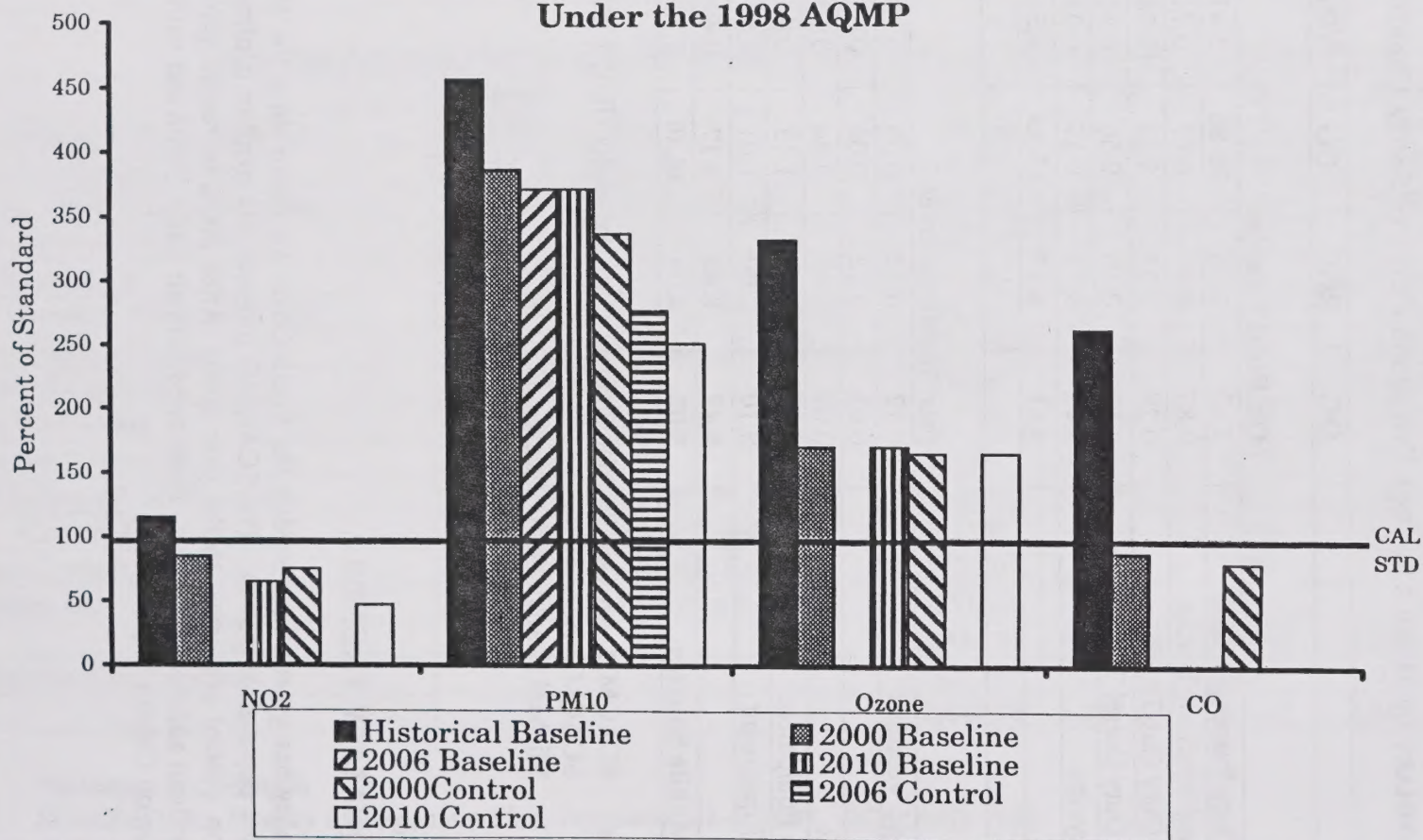
Sources: SCAQMD, Air Quality Management Plan, Appendix III-1, 1989.
 SCAQMD April 1990.
 Michael Brandman Associates, 1990.

AIR QUALITY TRENDS

Air quality has greatly improved in the South Coast Air Basin since the 1950s, despite sharply increased population growth. The SCAQMD projects this trend to continue even with no new emission control programs, to the year 2000. After 2000, increased growth will reverse this trend without additional controls. Projected future air quality, with and without planned controls, is shown on Exhibit AQ-10.



Exhibit AQ-10
Projection of Future Air Quality
Under the 1998 AQMP





AIR QUALITY CONTROL

Air quality planning and control in California are governed by the Federal Clean Air Act, as amended in 1977 and 1990, and the California Health and Safety Code, Division 26, which sets forth the duties and requirements of the California Air Resources Board (CARB), County air pollution control districts, and regional air quality management districts, including those in the South Coast Air Basin, the Bay Area, and the metropolitan Sacramento region. In general, the CARB has authority to regulate motor vehicle emissions through technological controls, fuel standards, etc. Stationary sources are regulated by local and regional air districts. Since 1988, regional districts in nonattainment areas also have authority to regulate indirect sources, which are sources that attract large numbers of motor vehicles.

The Clean Air Act required local planning areas in each state to prepare plans demonstrating how health-based pollutant standards would be achieved by December 31, 1987. Plans were submitted for the South Coast Air Basin in 1979 and 1982, but the two plans could not show attainment by the 1989 deadline. Adoption of a revised Clean Air Act occurred on November 15, 1990. Amendments under consideration by Congress as of April 1990 would extend attainment deadlines for the most seriously impacted areas, principally the South Coast Air Basin, to the year 2010.

In 1989, the SCAQMD adopted a revised Air Quality Management Plan (AQMP) which demonstrates attainment of all federal air quality standards by the year 2000. It is the most stringent air quality plan prepared to date anywhere in the United States. Included in the plan are transportation management measures, strict controls on automobile emissions, new industrial controls, extension of controls to very small sources, and restrictions on the use of various types of products, such as paints and coatings.

The 1989 AQMP emphasizes the need for local government efforts to achieve air quality standards. The plan directs local governments to amend their general plans to include air quality elements, or their equivalent, by January 1, 1991. Programs, which are to be identified and implemented through the local air quality element, are identified in Table AQ-4.

In 1988, the California Legislature enacted the California Clean Air Act (CCAA). The CCAA amended the enabling authority for air pollution control districts in California. These districts, including the SCAQMD, have been given by the legislature, through the CCAA, broad new authority to regulate motor vehicle use with indirect source controls in areas that have not met national or state ambient air quality standards.



**TABLE AQ-4
AIR QUALITY MANAGEMENT PLAN
CONTROL MEASURES TO BE IMPLEMENTED BY LOCAL GOVERNMENTS**

Control Measure #	Title	Required Recommended			
		First Activity	In General Pre-1/2/91	In General Plan	Plan
Transportation					
1.a	Alternative Work Weeks and Flextime	Administrative Action	X		X
1.b	Telecommunications	Administrative Action			X
2.a	Employer Rideshare & Transit Incentives	Ordinance Adoption	X		X
2.b	Parking Management	Air Element & Ordinance Adoption	X	X	X
2.c	Vanpool Purchase Incentives	Support Legislation	X		X
2.d	Merchant Transportation Incentives	Ordinance Adoption			X
2.e	Auto Use Restrictions	Air Element & Ordinance Adoption	X	X	X
2.g	Transit Improvements	Seek Transit Parking	X		X
3.a	Truck Dispatching, Rescheduling, and Rerouting	Air Element & Ordinance Adoption	X	X	X
4	Traffic Flow Improvements Action	Administrative Action	X		X
5	Non-recurrent Congestion	Administrative Action	X		X
15	Electric Vehicles	Support Legislation	X		X
G-4	Clean Fuels in New Fleet Vehicles	Administrative Action	X		X
Air Carrier Airport Measures					
6	Aircraft and Ground Service Vehicles	Ordinance Adoption			X
7	Centralized Ground Power Systems	Ordinance Adoption			X
8	Airport Ground Access	Ordinance Adoption			X
9	Replacement of High-Emitting Aircraft	Enact Memorandum of Understanding		X	
Port Measures					
3.b	Diverting Port-Related Truck Traffic to Rail	Administrative Action	X		X
11	Rail Consolidation to Reduce Grade Crossings	Establish Joint Powers Authority	X		X
Land Use					
17	Growth Management	General Plan Amendment & Ordinance Adoption	X	X	X
X	Sensitive Receptors	Ordinance Adoption			X
Particulate and Building Emissions					
12.a	Paved Roads	Administrative Action & Ordinance Adoption	X		X



**TABLE AQ-4
AIR QUALITY MANAGEMENT PLAN
CONTROL MEASURES TO BE IMPLEMENTED BY LOCAL GOVERNMENTS
(CONT'D)**

Control Measure #	Title	Required Recommended			
		First Activity	In General Pre-1/2/91	In General Plan	Plan
F-4	Fugitive Emissions from Construction of Roads and Buildings	Ordinance Adoption			X
12.b	Unpaved Roads and Parking Lots	Ordinance Adoption			X
E-3	Fugitive Dust from Agriculture	Ordinance Adoption			X
F-9	Low Emissions Materials for Building Construction	Ordinance Adoption			X
Energy Conservation					
18.a	Local Government Energy Conservation	Administrative Action	X		X
18.c	Pricing, Tax, and Subsidy Incentives	Ordinance Adoption	X		X
D-4	Emissions from Swimming Pool Water Heating	Ordinance Adoption	X		X
D-5	Emissions from Residential and Commercial Water Heating	Ordinance Adoption	X		X
18.b	Waste Recycling	Ordinance Adoption	X		X
Government Organizations					
X	Coordination of Local Plans and Programs	Administrative Action			X
X	Intergovernmental Coordination and SCAQMD Referrals	Administrative Action			X



GOALS AND POLICIES

The CCAA requires that regional emissions be reduced by 5 percent per year, averaged over 3 year periods, until attainment can be demonstrated. Each area that does not currently meet a national or state ambient air quality standard is to prepare a plan, which demonstrates how attainment will be reached. The attainment goal for areas with the most heavily degraded air quality, including the South Coast Air Basin, is December 31, 2000. Plans are due to the California Air Resources Board in 1991, and must be updated in 1998 if attainment cannot be demonstrated by the year 2000.

All proposed uses must be considered consistent with the South Coast Air Quality Management Plan. Accordingly, existing inconsistent uses must be corrected or eliminated. Potential uses to be located in or near the City must not provide new sources of pollutants or increased beyond acceptable levels existing emissions that are considered problematic in meeting the goals and objectives of the AQMP. Uses that generate hydrogen sulfide shall be avoided.



GOVERNMENTAL COORDINATION ON AIR QUALITY ISSUES

GOAL 1: To protect the health and welfare of the residents of the City of Santa Clarita and the Planning Area by encouraging coordination among City and other governmental agency air quality policies, plans, and programs.

Policies:

- 1.1 Coordinate the planning and implementation of land use, transportation, housing, energy, and other elements of the General Plan with the air quality element.
- 1.2 Coordinate with the local, regional, state, and national agencies in efforts to plan and implement clean air objectives for the South Coast Air Basin. These agencies include, but are not limited to, EPA, SCAQMD, and SCAG.

TRANSPORTATION DEMAND MANAGEMENT

GOAL 2: To reduce emissions resulting from work and non-work vehicle trips by private and local government employees.

Policies:

- 2.1 Promote vehicle trip reduction and other transportation demand management (TDM) programs.
- 2.2 Encourage car pools and company van pools.
- 2.3 Develop in the city and promote in the planning area alternative transportation systems including, but not limited to, comprehensive bus service, bicycle and pedestrian trails, and associated support facilities.
- 2.4 Promote programs which reduce vehicle emissions, including walking, bicycling, ridesharing, transit subsidies, staggered work schedules, public transit enhancement, telecommuting, tele-education, reduced work week, and park-and-ride facilities.
- 2.5 Encourage programs, which minimize local traffic congestion at large special events. Programs could include prepurchase of parking tickets, staggering hours of arrival, offsite parking with shuttles.



- 2.6 Encourage improvements consistent with the Congestion Management Plan (CMP).
- 2.7 Encourage the use of communication technology as an alternative to vehicle trips.

PEAK-PERIOD TRUCK TRAVEL

GOAL 3: To reduce emissions from peak-period truck travel and number and severity of truck-involved accidents.

Policies:

- 3.1 Promote a more efficient use of the road system by encouraging the diversion of commercial truck traffic, whenever feasible, to off-peak periods.
- 3.2 Encourage off-peak hour truck deliveries to local commercial centers.
- 3.3 Reduce commercial truck access through residential neighborhoods.
- 3.4 Require on-street haul routes for earth movement to identify appropriate, safe travel routes to minimize impacts to other vehicular traffic, pedestrians, and sensitive land uses.
- 3.5 Collect fees for oversize vehicles and encroachment permits to use toward promoting reductions in truck emissions and safe trucking practices.
- 3.6 Provide street signage to direct commercial trucks to use appropriate intra-city routes.

PARKING MANAGEMENT

GOAL 4: To reduce transportation source emissions by promoting efficient and creative parking plans, which reduce vehicle emissions.

Policies:

- 4.1 Promote local solutions to parking management, including such actions as parking facility design, which reduces vehicle idling or programs, which discourage the use of single-occupant vehicles in congested areas.



- 4.2 Encourage parking areas that provide appropriate technology (such as electric vehicle charging stations) and parking preferences for alternative fuel / low emission vehicles.
- 4.3 Encourage commercial and industrial uses to provide employee carpool and vanpool parking areas.

TRAFFIC FLOW IMPROVEMENTS

GOAL 5: To reduce vehicle emissions through traffic flow improvements.

Policies:

- 5.1 Develop and implement traffic flow improvements in order to reduce congestion, conserve energy, and improve air quality.
- 5.2 Promote synchronization of traffic lights to reduce emissions from delays.
- 5.3 Maintain adequate levels of service on roadways and at intersections to reduce emissions from delays.
- 5.4 Provide Class One biketrails to increase capacity of on-street travel lanes.

DESIGN CRITERIA

GOAL 6: To reduce vehicle and other emissions through promotion of appropriate building and site design criteria.

Policies:

- 6.1 Encourage new development, through the project review process, to incorporate appropriate building and site design criteria to minimize vehicular emissions, such as those resulting from onsite circulation patterns.
- 6.2 Provide onsite employee passive recreation areas (such as bike parking, locker rooms, outdoor seating and lunch areas) in new commercial and industrial uses to reduce vehicle trips.
- 6.3 Provide carpool and vanpool parking areas in commercial and industrial developments to reduce single-occupancy vehicle trips.



- 6.4 Encourage appropriate lot orientation and building design that provide for passive and/or natural heating and cooling opportunities that reduce dependency on air polluting energy sources.
- 6.5 Promote building and landscaping design that incorporates the use of solar energy, particularly the use of solar water heating for structures and swimming pools.
- 6.6 Encourage pedestrian oriented design and mixed-use development to reduce vehicle trips.

BUILDING MATERIALS AND METHODS

GOAL 7: To reduce potentially noxious emissions from building materials and methods.

Policies:

- 7.1 Encourage the use of low-polluting building and construction methods and materials.
- 7.2 Encourage building designs, materials and equipment that reduce the potential for indoor air pollution.

ENERGY CONSERVATION

GOAL 8: To reduce emissions resulting from energy consumption in residential, commercial, and governmental facilities.

Policies:

- 8.1 Encourage retrofitting programs to incorporate energy conservation in existing buildings.
- 8.2 Encourage the use of alternative energy sources.
- 8.3 Promote the use of appropriate landscaping, especially trees, to reduce heat buildup, save energy, and help cleanse the air.
- 8.4 Encourage proper solar orientation and design for new lots and buildings to reduce energy consumption.



- 8.5 Establish "Green Building" Guidelines and incentives to promote the construction of green buildings.
- 8.6 Encourage the use of appropriate, well-directed lighting to minimize light spillover and conserve energy.

AIR QUALITY EDUCATION

GOAL 9: To increase public awareness regarding regional and local air quality issues.

Policies:

- 9.1 Promote programs, which educate the public regarding regional and local air quality issues.
- 9.2 Provide information for the public about air quality issues including publishing brochures, holding public workshops and producing public service announcements.

LAND USE

GOAL 10: To reduce vehicle emissions by creating an urban form that efficiently utilizes urban infrastructure and services.

Policies:

- 10.1 Contribute to the reduction of vehicle miles traveled by achieving an appropriate job/housing balance.
- 10.2 Develop and encourage efficient transportation systems and land use patterns, which minimize total trips and vehicle miles traveled.
- 10.3 Locate child and adult day care centers near transit and work sites to minimize the number of vehicle trips.
- 10.4 Encourage land use patterns that integrate neighborhood commercial centers with surrounding residential uses.
- 10.5 Encourage opportunities for neo-traditional neighborhoods and mixed-use developments with the aim of reducing vehicle trips and vehicle miles traveled.



- 10.6 Encourage the identification and development of transit-villages in the Santa Clarita Valley around rail and fixed-route transit hubs.
- 10.7 Encourage transit-friendly and pedestrian-friendly improvements and design in commercial, industrial and residential development to provide convenient alternatives to single-occupancy vehicle travel.

CLEAN VEHICLE FUELS

GOAL 11: To reduce vehicle emissions by promoting the use of cleaner fuels and high-efficiency-low emission vehicles.

Policies:

- 11.1 Promote the use of alternative cleaner fuels such as electricity, compressed natural gas (CNG) and methanol for vehicles, to the extent feasible.
- 11.2 Support incentives for the use of clean alternative fuel vehicles.
- 11.3 Encourage parking for alternate fuel vehicles in commercial and industrial developments.
- 11.4 Encourage the development of infrastructure to accommodate alternative fuels.

TRANSIT IMPROVEMENTS

GOAL 12: To reduce mobile source emissions by promoting a shift from single occupancy to higher occupancy vehicles.

Policies:

- 12.1 Encourage the development of local public transit and availability, improved bus service (time schedule, performance, and connections), and actions designed to make the transit system user friendly.
- 12.2 Encourage the establishment of local and regional multimodal transportation facilities.
- 12.3 Encourage the development of a regional transportation network such as fixed guideway systems.



POLLUTANT EXPOSURE

GOAL 13: To prevent exposure of people, animals, and other living organisms from air pollutants.

Policies:

- 13.1 Implement measures to reduce particulate emissions from paved and unpaved roads, parking lots, road and building construction, and manufacturing sites.
- 13.2 Discourage inappropriate land uses that produce excessive levels of particulate dust within the City. Oppose such inappropriate land uses throughout the Santa Clarita Valley Planning Area.
- 13.3 Perform regular street sweeping/vacuuming to remove particulates from streets.
- 13.4 Protect Santa Clarita Valley residents and other sensitive receptors from exposure to toxic air pollutants by identifying sources of toxic contaminants and insuring that users comply with state regulations.
- 13.5 Protect Santa Clarita Valley residents and other sensitive receptors from exposure to unsafe levels of criteria pollutants or precursors, such as reactive organic gases, particulates, oxides of nitrogen, oxides of sulfur, lead, and carbon monoxide, by requiring that developers and owners of proposed new facilities mitigate emissions expected to result from completed projects to levels where they will not have a significant impact on local receptors.
- 13.6 Coordinate with the South Coast Air Quality Management District (SCAQMD) to insure that new occupants of existing commercial and industrial buildings are in compliance with all applicable SCAQMD rules and regulations.
- 13.7 Oppose the siting of landfills in the vicinity of the City of Santa Clarita unless the landfill development can be demonstrated not to affect air quality adversely.



IMPLEMENTATION OF THE AIR QUALITY ELEMENT

The City believes in and is committed to the implementation of this plan. Whereas the goals and policies of the plan establish the general framework for future growth and development, actual realization of the plan can only be accomplished through the specific implementing actions that the City subsequently undertakes.

The primary tools with which the City should undertake to implement the Air Quality Element of the plan include:

- ❖ Comply with South Coast Air Quality Management District rules and regulations
- ❖ Congestion management and transportation demand programs
- ❖ Transit improvement programs
- ❖ Clean air demonstration and education programs
- ❖ Recycling and conservation programs
- ❖ Dust control measures
- ❖ Sensitive use guidelines
- ❖ Landscaping/tree planting guidelines

The City will prepare and adopt an implementation program, which will be set forth in a separate document and will not be a part of the General Plan. The implementation program will set forth projects, programs, proposed ordinances, and guidelines for development and will include priorities and schedules for the consideration and adoption of these subsequent actions. The implementation program will be a dynamic document containing specific implementations, which will be periodically reviewed and updated to reflect changing conditions, needs, and priorities.